

Diffractional J/Ψ Production

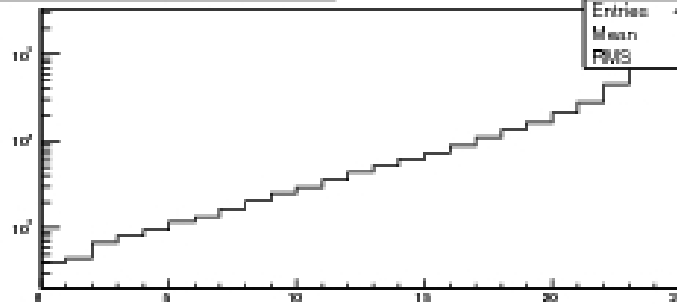
Update

- Luminosity and Calorimeter information study
- Data Plots
- Monte Carlo Plots
- Next Steps

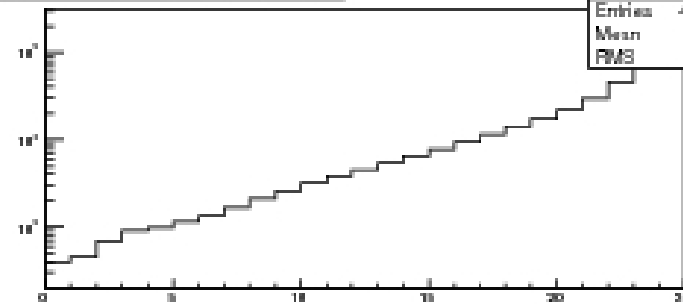


1-D Histograms (Data)

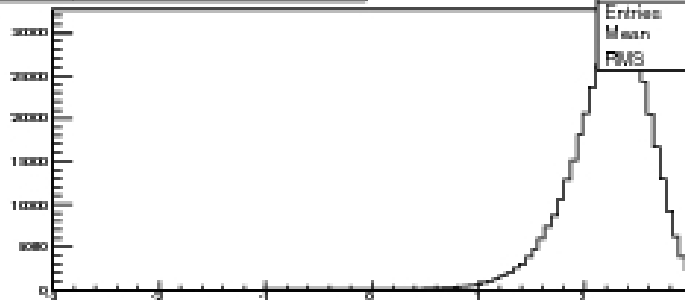
Multiplicity bins distribution - north detector



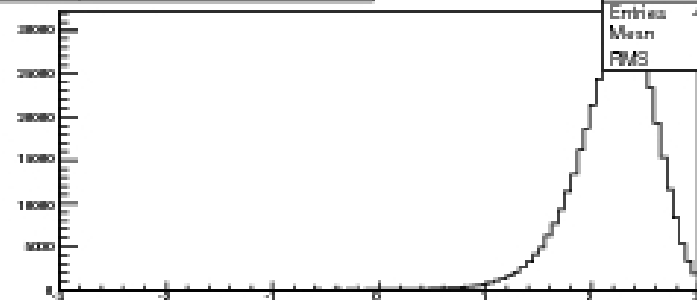
Multiplicity bins distribution - south detector



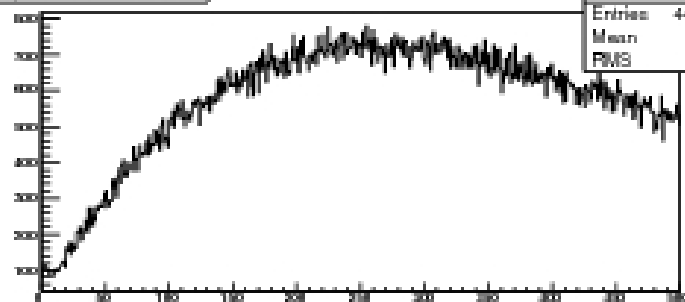
Energy deposition at north forward calorimeter



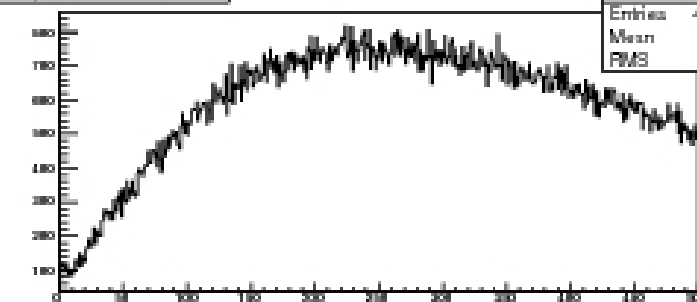
Energy deposition at south forward calorimeter



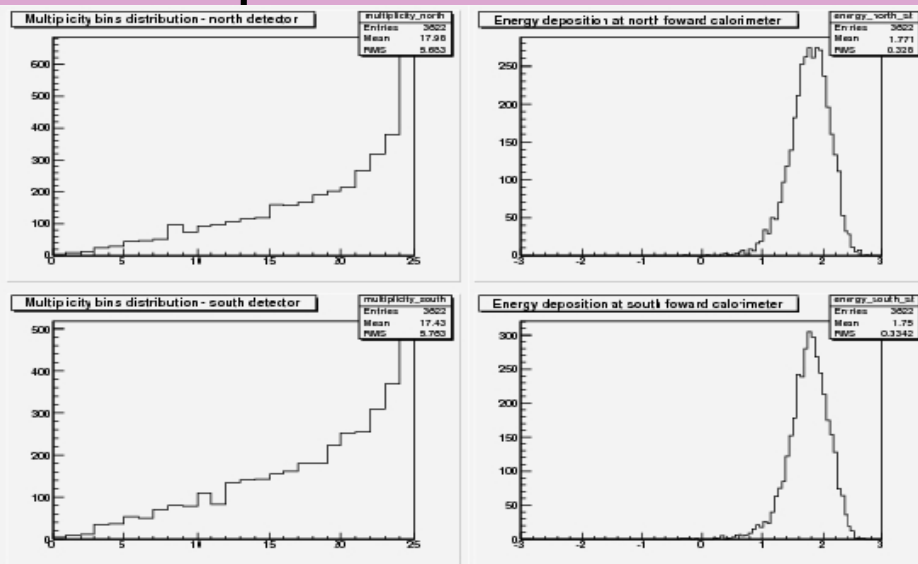
multiplicity cell energy north



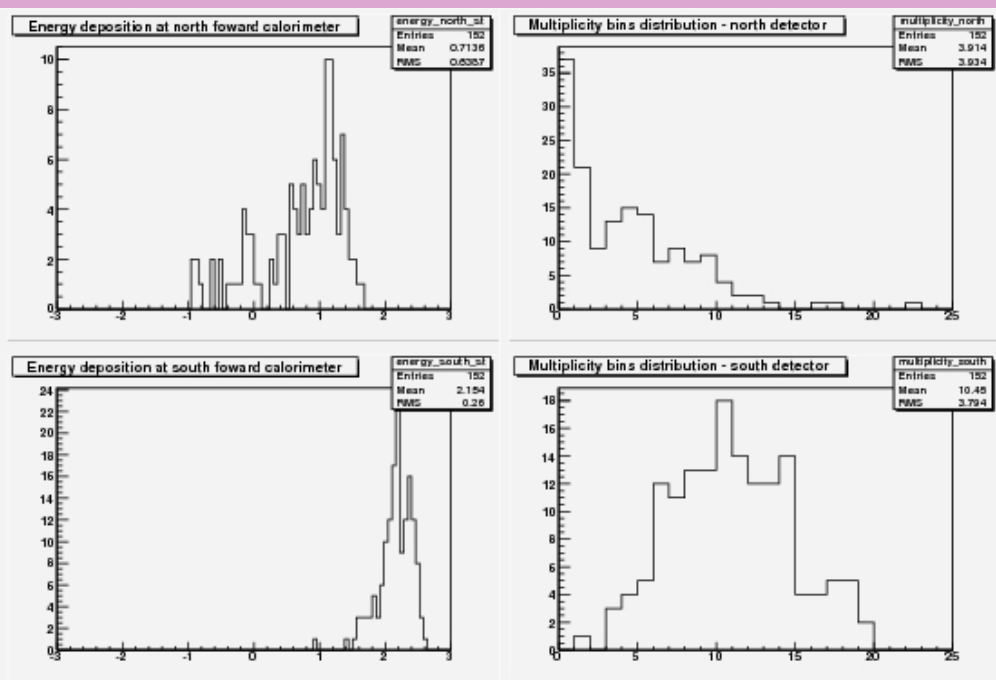
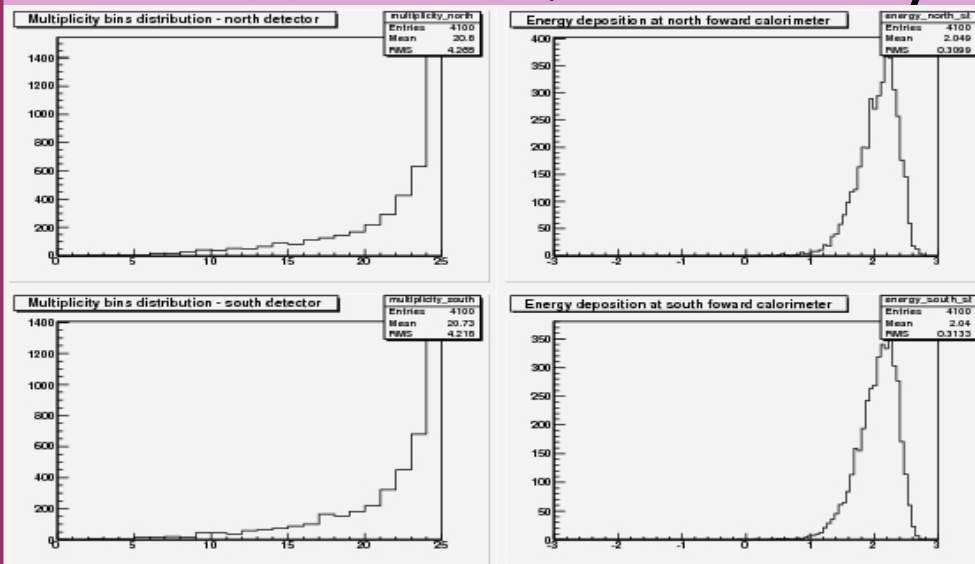
multiplicity cell energy south



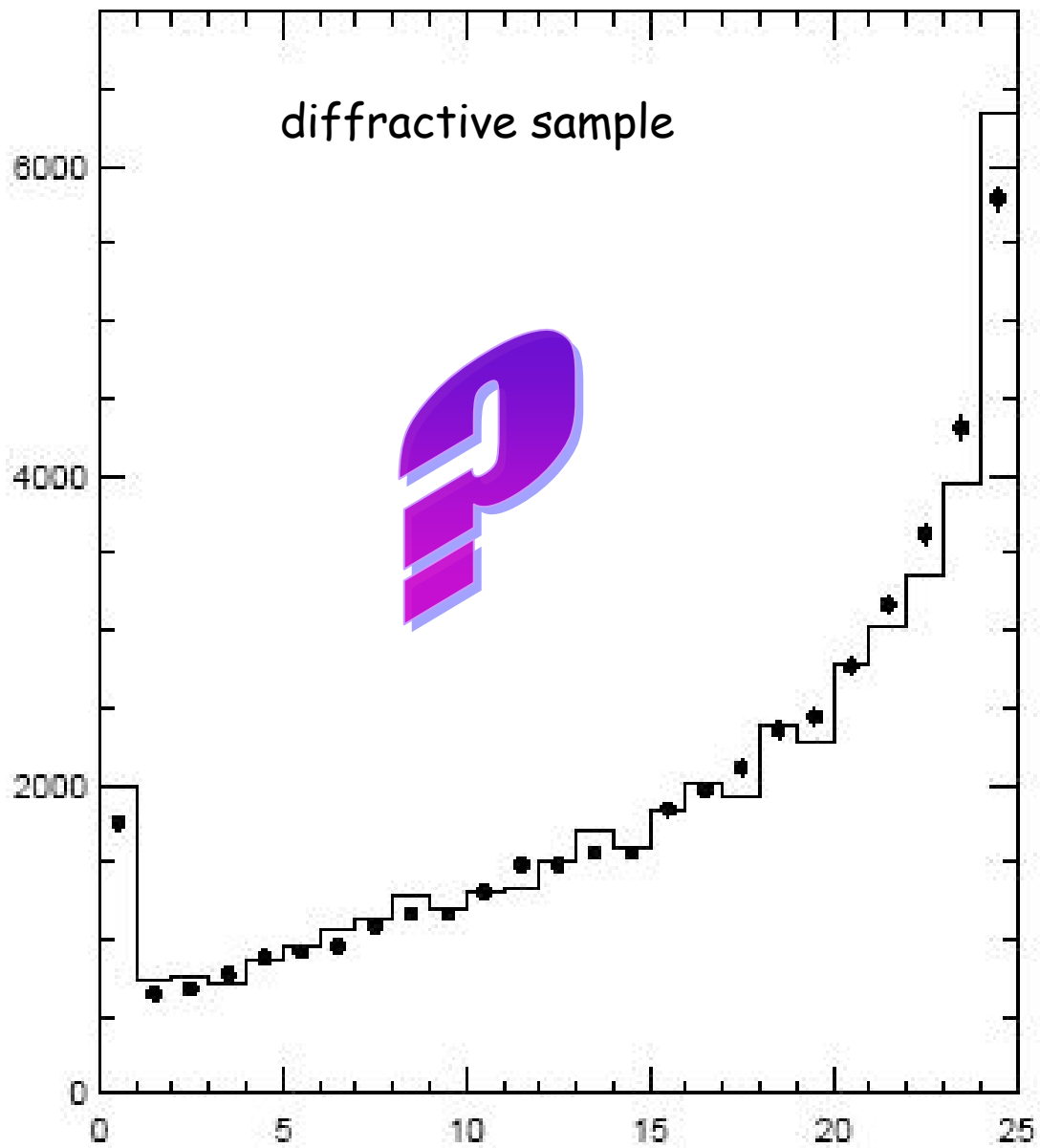
Prompt J/Ψ



J/Ψ from B decay



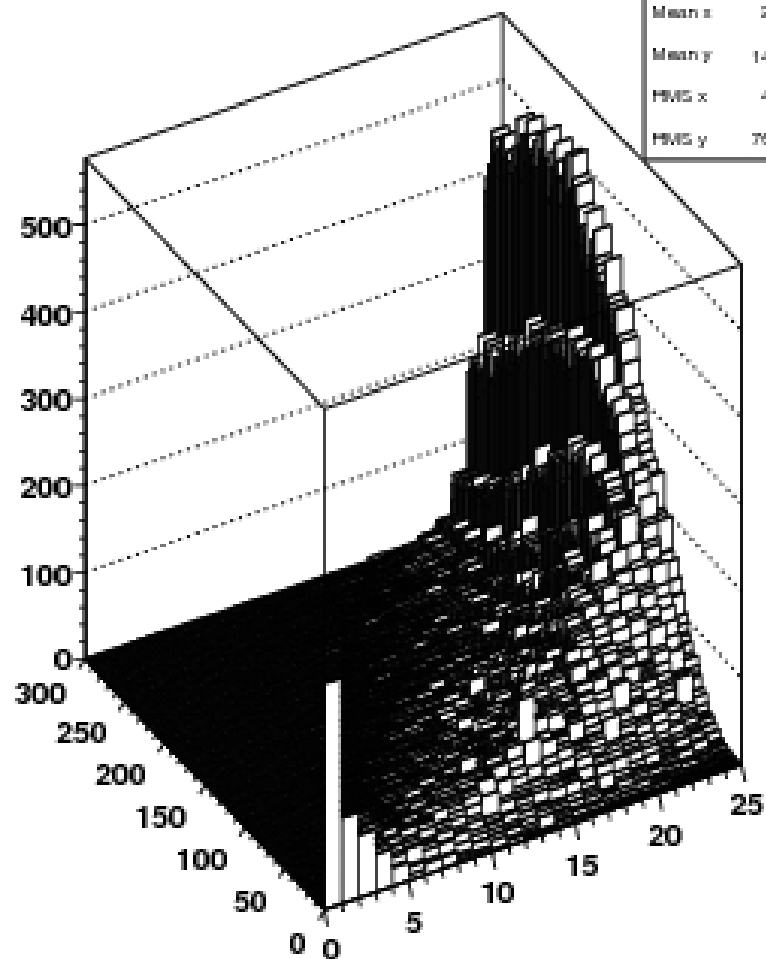
J/Ψ from B decay - diffractive





2-D Histograms (Data)

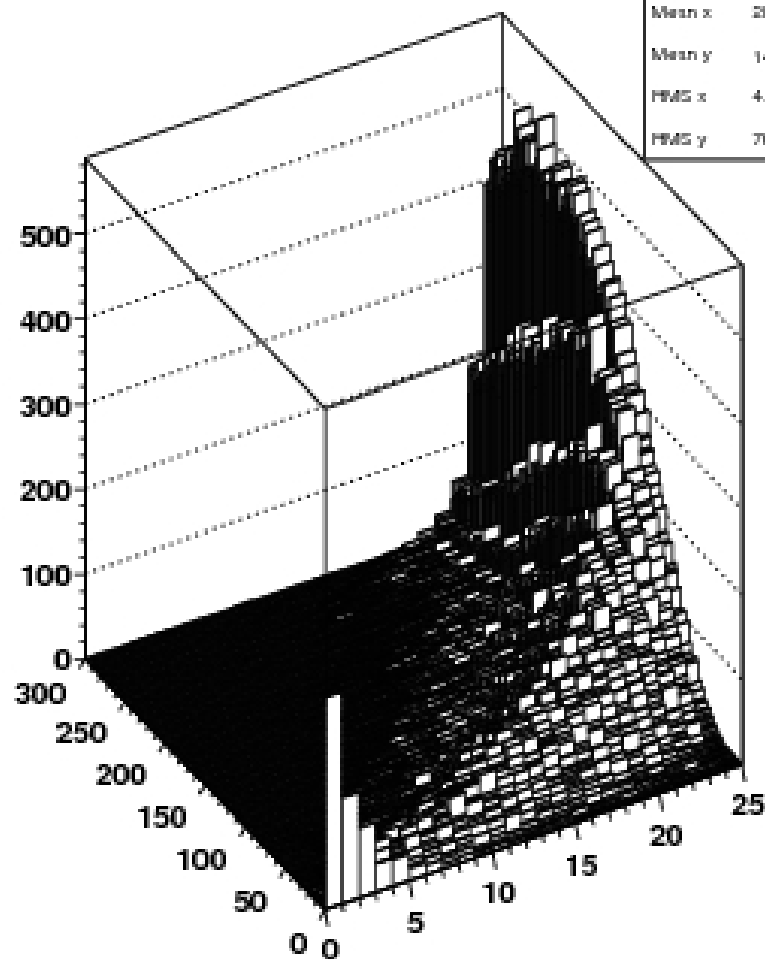
LM multiplicity X sum energy cell - north side



LM multiplicity X sum energy cell - north side

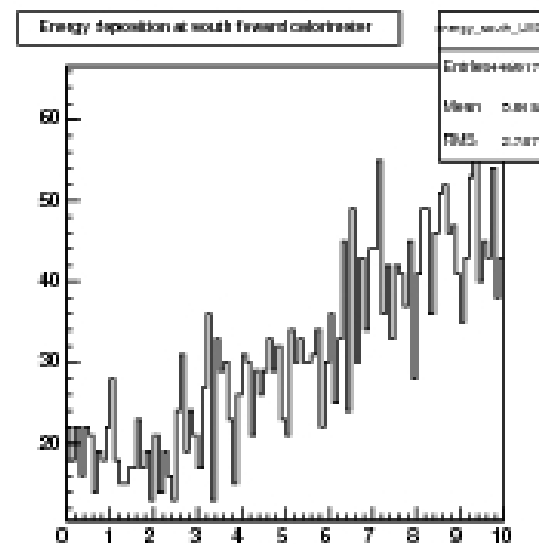
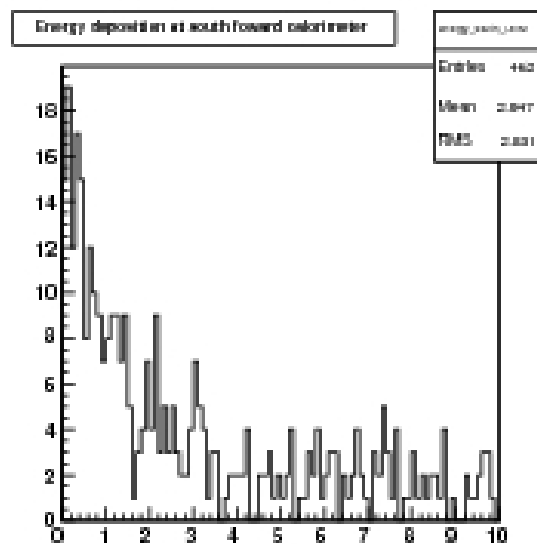
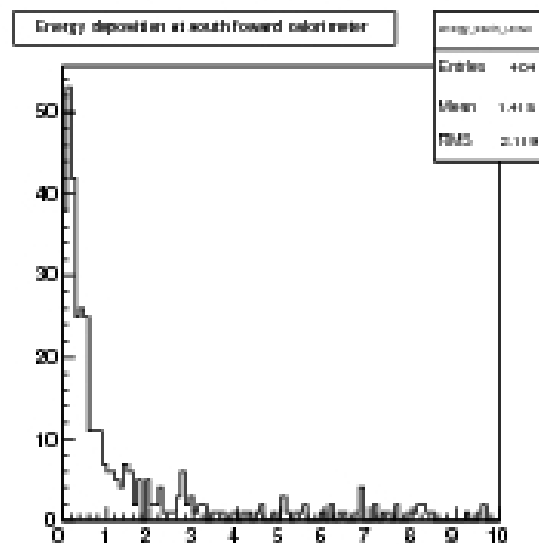
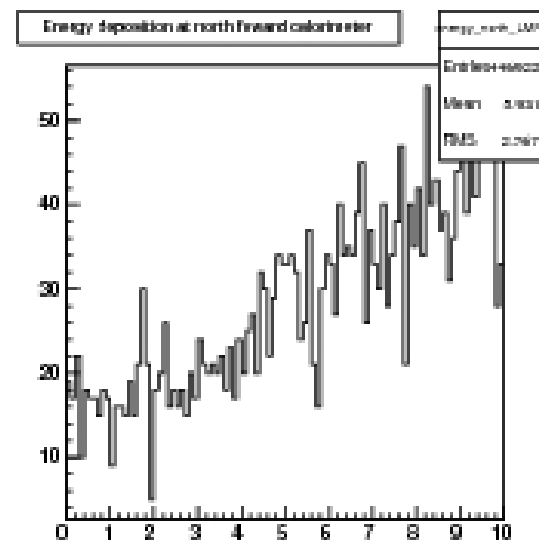
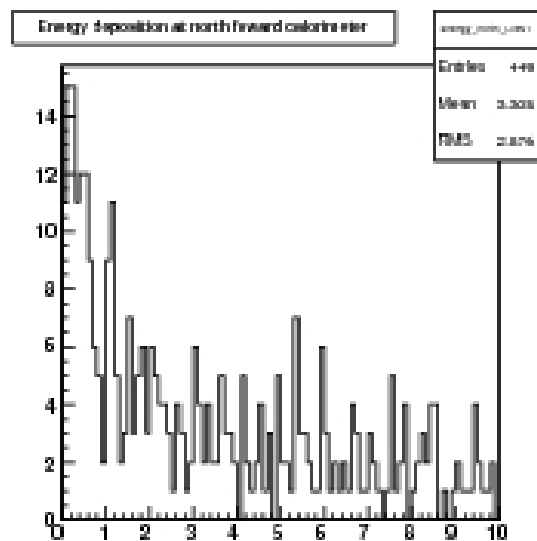
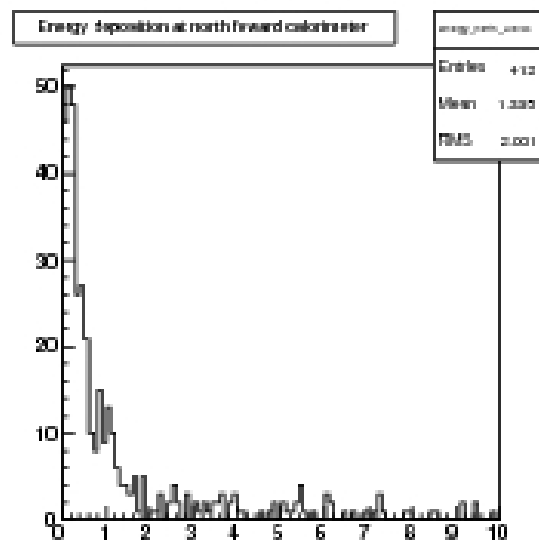
Entries	447783
Mean x	20.5
Mean y	144.4
RMS x	4.39
RMS y	76.93

LM multiplicity X sum energy cell - south side

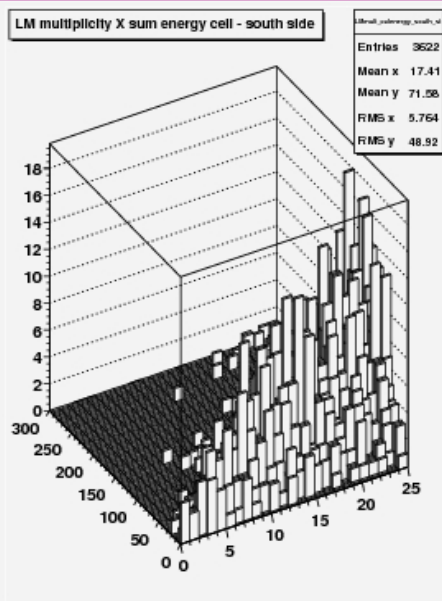
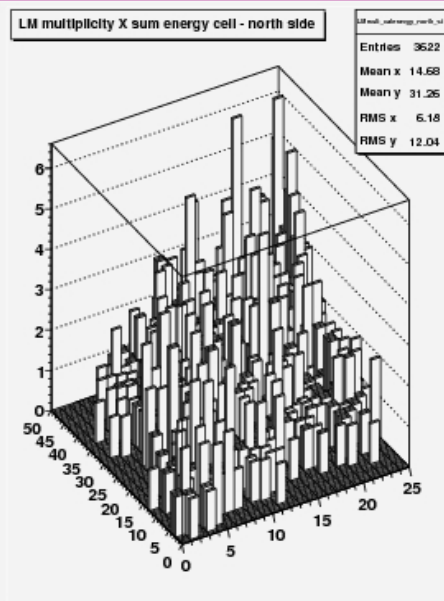


LM multiplicity X sum energy cell - south side

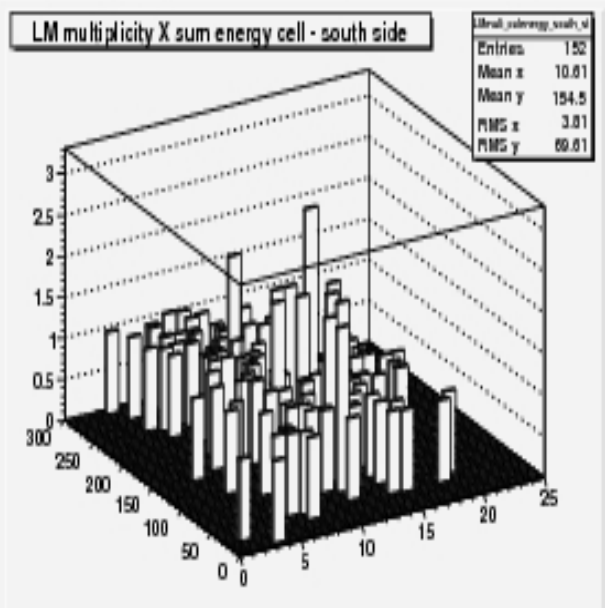
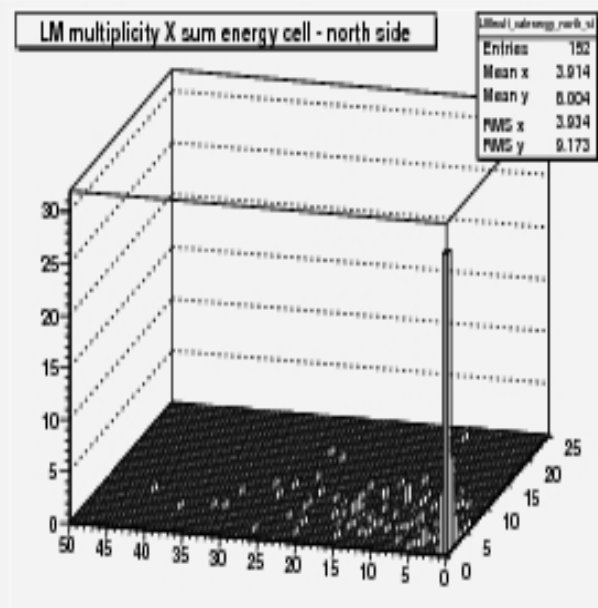
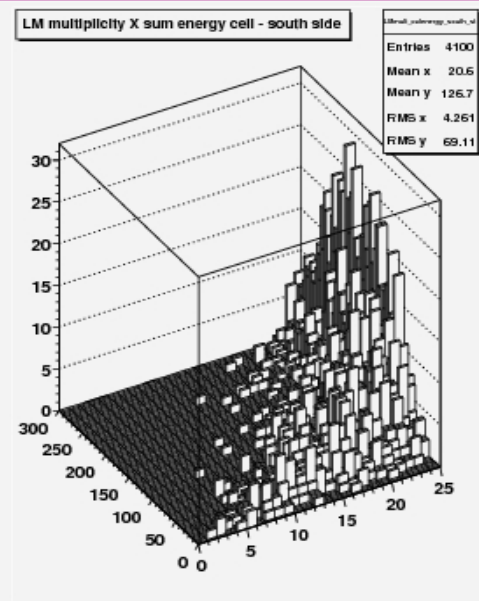
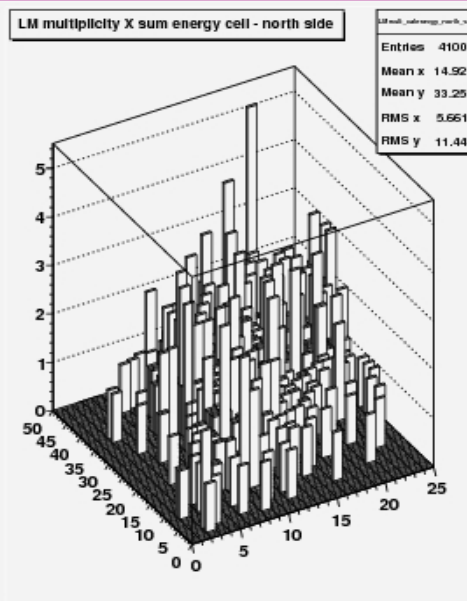
Entries	447783
Mean x	20.42
Mean y	142.4
RMS x	4.396
RMS y	76.75



Prompt J/ψ



J/ψ from B decay

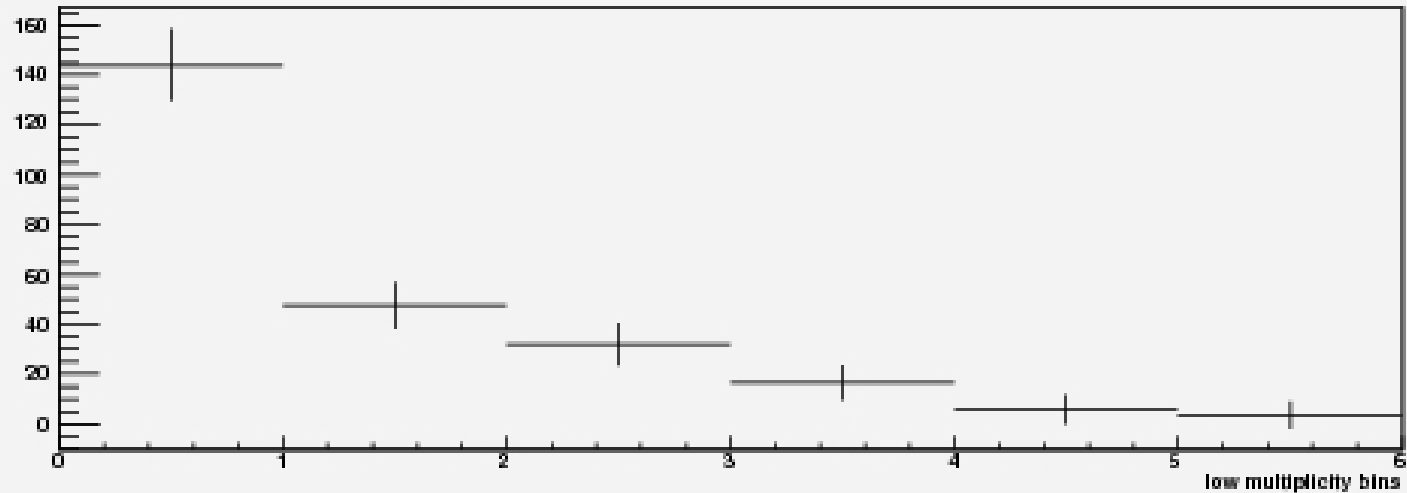


J/ψ from B decay - diffractive

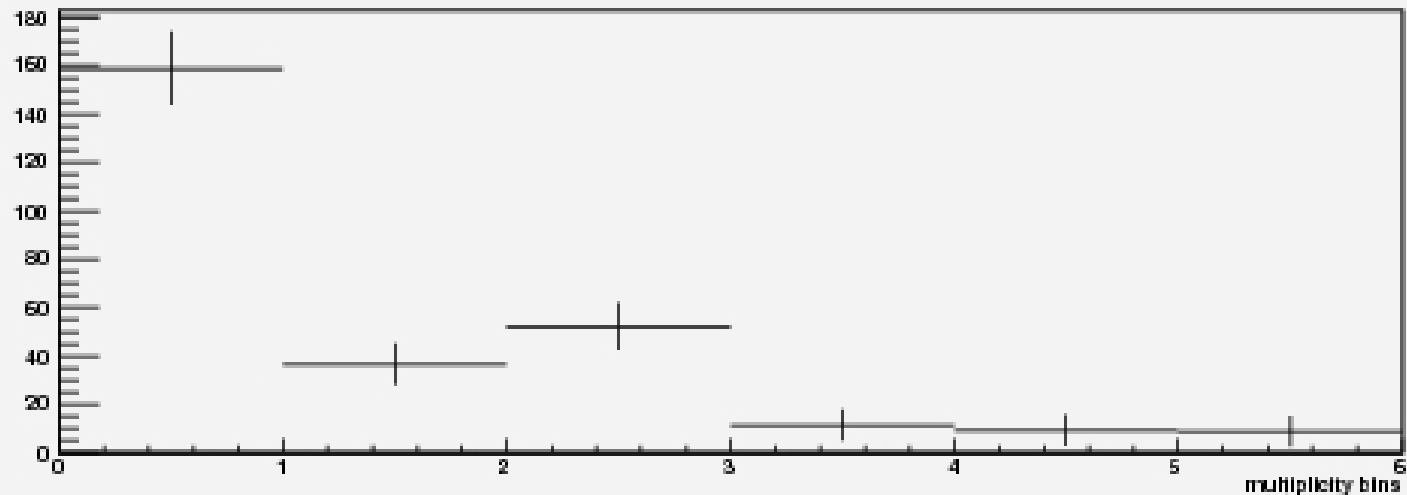


Looking at the low LM multiplicity in the first calorimeter energy bin: $(\text{sum_energy}) < 1\text{GeV}$

of jpsi by multiplicity bins - data sample



of jpsi by multiplicity bins - data sample



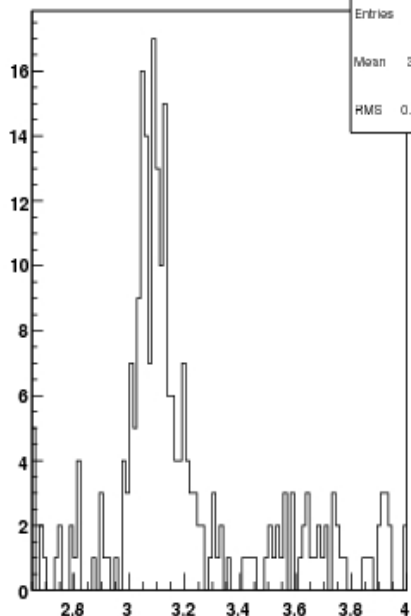


Gap Definition

*LM==0 (while the other side has hits) &&
(sum_energy)<1GeV*

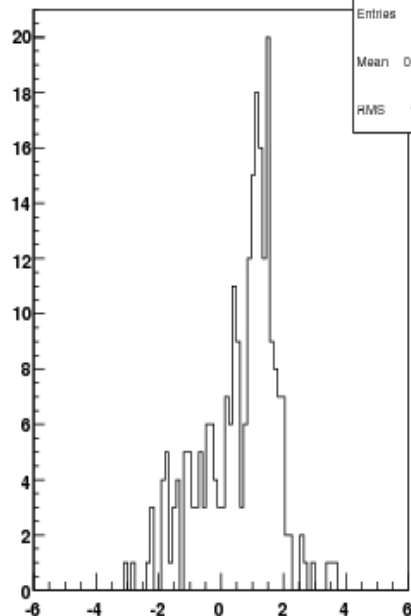
invariant mass distribution for jpsi candidates

jpsi_mass_gapN	
Entries	246
Mean	3.203
RMS	0.2847



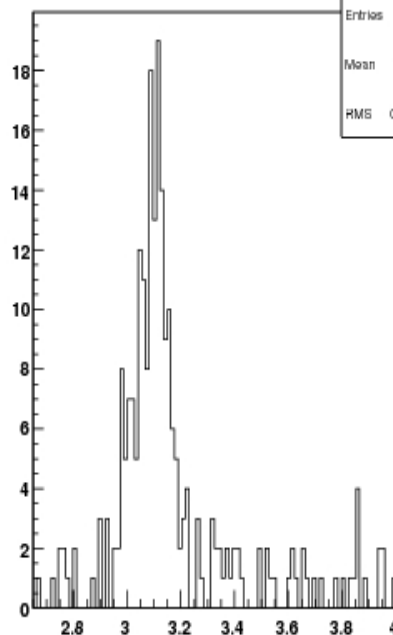
eta distribution

jpsi_eta_gapN	
Entries	246
Mean	0.6095
RMS	1.193



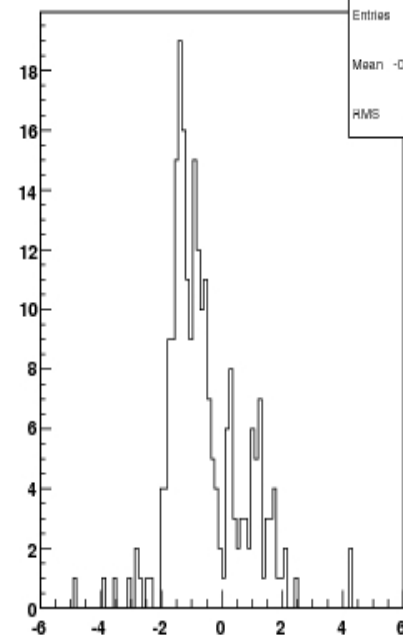
invariant mass distribution for jpsi candidates

jpsi_mass_gapS	
Entries	235
Mean	3.174
RMS	0.2479



eta distribution

jpsi_eta_gapS	
Entries	235
Mean	-0.5789
RMS	1.242



Next Steps

- Eta bins study;
- Luminosity bins study;
- Use significance of Length Decay to separate prompt from B decay production